REMARKS

This paper is responsive to the Office Action mailed July 2, 2004. The recognition of allowable subject matter in **claims 3 and 4** is noted with appreciation. Nevertheless, amendment, reexamination and reconsideration of the application are respectfully requested.

The Office Action

In the Office Action mailed July 2, 2004:

the Applicants traversal of the restriction requirement mailed February 24, 2004 was found not to be persuasive and the restriction requirement was made final;

claims 1, 2 and 5 were rejected under 35 U.S.C. §102(b) as being anticipated by the paper entitled Refinement of Printer Transformations Using Weighted Regression by Raja Balasubramanian and Martin S. Maltz ("Balasubramaniam-1996");

claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Balasubramanian-1996 in view of U.S. Patent No. 5,612,902 to Stokes ("Stokes").

Reply to the Response to the Traversal of the Restriction Requirement

The Office Action asserts that the traversal of the restriction requirement was not persuasive. However, in explaining this assertion, the Office Action mischaracterizes the argument set forth in the Response to the Restriction Requirement and Preliminary Amendment mailed by the Applicants on March 23, 2004. The Office Action asserts that the arguments of the Applicant are that Group I and Group II <u>are not</u> distinct and are patentable over each other. However, this is not what the Applicants argued.

Instead, the Applicants pointed out that as defined in the MPEP §802.01 the term "distinct" means that two or more subjects <u>are patentable (novel and unobvious)</u> over each other. The Applicants went on to submit that the claims of Group III <u>would not be patentable over the claims of Group I</u>. Therefore, under the definition of "distinct" provided by the MPEP the claims of Groups I and III are not distinct. However, in order for the Restriction Requirement to be proper the groups of claims must be distinct. Therefore, the restriction requirement between the claims of Group I **(claims 1-5)** and Group III **(claims 11-19)** is improper and should be

withdrawn.

Telephone Interview Summary

The participation of the Examiner in a brief Telephone Interview on July 12, 2004 is noted with appreciation. In that interview, a representative of the Applicants, Mr. Thomas Tillander, noted a mischaracterization of the argument of the Applicants made in the response to the Restriction Requirement mailed February 24, 2004. Mr. Tillander pointed out that the Office Action characterized the traversal as being on the grounds that Group I and Group III are not distinct and are patentable over each other, however Mr. Tillander further noted that the argument made in the Response to Restriction Requirement and Preliminary Amendment mailed, by the Applicants, on March 23, 2004, was that the claims of Group I would not be patentable over the claims of Group III. For example, the claims of Group I would be obvious in light of the claims of Group III. Therefore, it was submitted, the claims of Group I and Group III are not distinct as the term is defined in the MPEP §802.01. Therefore, the restriction requirement is improper. The Examiner agreed to discuss the matter with the Primary Examiner and call Mr. Tillander. In a follow up phone call, the Examiner indicated that the Restriction Requirement would not be withdrawn on the basis of the Telephone Interview. Mr. Tillander indicated that he would represent the arguments in writing.

The Present Application

By way of brief review, the present application is directed towards systems and methods for detecting probable errors or glitches in color measurements and providing replacement values for such erroneous measurements. For example, document processors rely on color measurements as feedback in color rendering control loops. Erroneous measurements can cause instability in such control loops. Therefore, the subject matter of the present application attempts to detect erroneous measurements, caused by noise or other occasional sensor glitches, and replaces the erroneous sensor reading with a substitute value that is, at least, more reasonable than the detected erroneous value. For example, a color producing system is modeled. The model is used to predict sensor readings. If the actual sensor reading is reasonably close to the predicted sensor reading, then the actual sensor reading is deemed to be accurate and is used for its intended purpose, such

as, for example, as feedback in one or more control loops. If the actual sensor reading is unreasonably different than the predicted sensor reading, then the actual sensor reading is deemed to be erroneous and it is replaced with another value. For example, the sensor reading is replaced with the predicted sensor reading, or with historical data associated with the same or a similar input value.

The Cited References

In contrast, the primary reference of the Office Action to "Refinement of Printer Transformations Using Weighted Regression" by Raja Balasubramanian and Martin S. Maltz is directed to a method for using measurements of mixed colors to refine a color transform (page 334, first sentence of the third paragraph under the subheading introduction). Balasubramanian and Maltz present an approach to refine the accuracy of a printer color transform with a number of additional measurements of mixed color patches. They assume that a transform exists that approximates the printer behavior to some degree. They use additional measurements to reduce the error in the transform (page 335, first paragraph). The Office Action asserts that Balasubramanian and Maltz disclose comparing a measured color signal to an expected color signal to produce a color error value, and selectively replacing the measured color signal based on the color error. The Applicants respectfully disagree. Instead, it is respectfully submitted that Balasubramanian and Maltz disclose using measurements to adjust parameter values of a model. It is respectfully submitted that Balasubramanian and Maltz <u>do not disclose or suggest detecting errors in the measurement and replacing measured values with substitute values</u>.

Stokes allegedly discloses a method and system for analytic generation of multidimensional color look-up tables. The Office Action relies on Stokes for disclosure of various printer models.

The Claims are Not Anticipated

Claims 1, 2 and 5 were rejected under 35 U.S.C. §102(b) as being anticipated by Balasubramanian-1996. In explaining the rejection of **claim 1**, the Office Action assert that Balasubramanian-1996 discloses comparing a measured color signal to an expected color signal to produce a color error value and selectively replacing the measured color signal based on the color error. In support

of this assertion, the Office Action directs the attention of the Applicants to the result of a regression analysis and the result of a matrix multiplication mentioned in Balasubramanian-1996.

However, the result of the regression is a matrix intended to approximate a transformation error. It is respectfully submitted that this transformation error is not a color error value based on a comparison of a measured color signal to an expected color signal as disclosed in the present application and recited in **claim 1**. However, even if the result of the regression analysis is considered to be a color error value produced from a comparison of a measured color signal to an expected color signal, it is respectfully submitted that the <u>disclosure of the result of the matrix multiplication is not a disclosure or a suggestion of selectively replacing the measured color signal based on the color error</u>. Instead, it is respectfully submitted that the result of the matrix multiplication is a refined printer model or a refined color correction transform. In this regard, the attention of the examiner is directed to the captions of FIG. 1 and FIG. 2 of Balasubramanian-1996 which read -- Block diagram of refinement procedure for printer model -- and -- Block diagram of refinement procedure for color correction transform --. It is respectfully submitted that <u>neither these figures, nor Balasubramanian-1996 as a whole, disclose or suggest selectively replacing a measured color signal based on a color error value determined from comparing a measured color signal to an expected color signal</u>.

For at least the foregoing reasons, **claim 1**, as well as **claims 2-5**, which depend therefrom, is unanticipated in view of Balasubramanian-1996.

In explaining the rejection of **claim 2**, the Office Action asserts that Balasubramanian-1996 discloses replacing the measured color signal with a predicted color signal based on the expected color signal. In support of this assertion, the Office Action directs the attention of the Applicants to FIG. 2 of Balasubramanian-1996.

However, as explained above, it is respectfully submitted that FIG. 2 does not disclose or suggest replacing a color measurement signal with a predicted color signal. Indeed, it is not entirely clear to the Applicants which portion of FIG. 2 the Office is referring to. It is respectfully submitted that if FIG. 2 includes a measurement at all, it is at the top of the figure between the printer and the look-up table (LUT). It is respectfully submitted that at that portion of FIG. 2 a color described in terms of Lab is used to look-up another color description in terms of

CMYK. It is respectfully submitted that this is not a disclosure or a suggestion of replacing the measured color signal with a predicted color signal. Furthermore, even if using the color description in terms of Lab as an index into the look-up table to access the color description in terms of CMYK is considered to be replacing a measured color signal with a predicted color signal, FIG. 2 does not disclose or suggest that such a replacement is done based on an expected color signal. For the foregoing reasons, it is respectfully submitted that Balasubramanian-1996 does not disclose or suggest replacing a measured color signal with a predicted color signal based on an expected color signal.

For at least the foregoing additional reasons, **claim 2** is unanticipated by Balasubramanian-1996.

The Claims are Not Obvious

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Balasubramanian-1996 in further view of Stokes. However, **claim 5** depends from **claim 1** and is patentable for at least that reason.

Additionally, **claim 5** recites implementing a model of the color production process comprises selecting at least one of a refined parameterized Neugebauer model, a multi-dimensional numerical model and an online statistical parameterized model representative of the color producing process. In explaining the rejection of **claim 5**, the Office Action asserts that Balasubramanian-1996 discloses that models can be used and specifies a Neugebauer model. However, it is respectfully submitted that disclosure of a Neugebauer model is not disclosure of a refined parameterized Neugebauer model.

The Office Action goes on to assert that Stokes discloses an empirical model and draws an analogy between the empirical model disclosed in Stokes and the online statistical parameterized model recited in **claim 5**. It is respectfully submitted that the online empirical model of Stokes is not an online statiscal parameterized model as disclosed in the present application and recited in **claim 5**.

The Office Action also asserts that Stokes discloses a Viggiano analytical model and draws an analogy between the Viggiano analytical model and the multi-dimensional numerical model recited in **claim 5**.

However, even if the Viggiano analytical model is analogus to the multi-dimensional numerical model recited in **claim 5**, Stokes nor Balasubramanian-1996

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disclose or suggest selectively replacing a measured color signal based on a color error value as disclosed in the present application and recited in **claim 1**.

For at least the foregoing reasons, **claim 5** is not obvious in light of Balasubramanian-1996 and Stokes taken alone or in any combination.

Claim 11 recites a system including a color measurement sensor operative to monitor a color produced in a color producing process. The system comprising, among other things a preferred signal selector operative to select a preferred signal from among at least the model color signal and the measured color signal and a signal consumer operative to receive the preferred signal from the preferred signal selector. It is respectfully submitted that Balasubramanian-1996 and Stokes do not disclose or suggest a preferred signal selector operative to select a preferred signal from among at least the model color signal and the measured color signal and a signal consumer operative to receive the preferred signal from the preferred signal selector.

For at least these reasons, **claim 11**, as well as **claims 12-19** which depend therefrom, is not anticipated and is not obvious in light of Balasubramanian-1996 and Stokes taken alone or in any combination.

Telephone Interview

In the interests of advancing this application to issue the Applicant(s) respectfully request that the Examiner telephone the undersigned to discuss the foregoing or any suggestions that the Examiner may have to place the case in condition for allowance.

CONCLUSION

Claims 1-5 remain in the application. Withdrawal of the Restriction Requirement and reinstatement of **claims 11-19** is respectfully requested. For at least the reasons cited above, the application is in condition for allowance. Accordingly an early indication thereof is requested.

Respectfully submitted,

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_8/30/04_
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